

Patent Claims

1. Rotor for an electric motor, particularly an electric
5 line-start motor, with axially extending receiving
spaces (4 to 7) for permanent magnets (10 to 13) and
with axially extending accommodating spaces (20 to 25)
for conductor rods, **characterised in** that in at least
one sector of the rotor the accommodating spaces (20
10 to 25) for the conductor rods have a substantially
elongate cross-section, and that in this sector, in a
cross-sectional view, the accommodating spaces (20 to
25) for the conductor rods are made to be curved
along their longitudinal axis.
- 15 2. Rotor according to claim 1, characterised in that
several permanent magnets (10 to 13), particularly
four permanent magnets, are located so that they gen-
erate a rotating magnet field with a neutral axis (16)
20 and a magnet axis (17), which is arranged to be per-
pendicular to the neutral axis (16), the curvature
radii of the accommodating spaces (20 to 25) for the
conductor rods decreasing from the neutral axis (16)
in the direction of the magnet axis (17).
- 25 3. Rotor according to one of the preceding claims, char-
acterised in that the distance (35 to 39) between the
accommodating spaces for the conductor rods is con-
stant.
- 30 4. Rotor according to one of the preceding claims, char-
acterised in that in a cross-sectional view the ac-
commodating spaces (20 to 25) for the conductor rods

are curved and arranged along their longitudinal axis in such a manner that the distance of the accommodating spaces (20 to 25) for the conductor rods to the rotational axis of the rotor, in a cross-sectional view through the rotor, increases from the neutral axis (16) in the direction of the magnet axis (17).

5. Rotor according to one of the preceding claims, characterised in that in a cross-sectional view through the rotor, in the vicinity of the neutral axis (16) and disregarding the curvature of the accommodating spaces, the longitudinal axes of the accommodating spaces (20, 21) for the conductor rods are aligned substantially radially in relation to the rotor, and

10 in that in a cross-sectional view through the rotor the longitudinal axes of the accommodating spaces (24, 25) for the conductor rods are arranged to be turned in relation to the magnet axis (17) in such a manner that in a cross-sectional view through the rotor the

15 radial outer ends of the accommodating spaces (24, 25) for the conductor rods are located at a smaller distance to the magnet axis (17) than with a radial alignment.

25 6. Rotor according to one of the preceding claims, characterised in that in a cross-sectional view each accommodating space (20 to 25) for the conductor rods has two side walls (31, 32), which have different curvatures.

30 7. Rotor according to claim 6, characterised in that the curvature radii of the side walls (31, 32) of the accommodating spaces for the conductor rods are reduced

from the neutral axis (16) towards the magnet axis (17).

8. Rotor according to claim 6 or 7, characterised in that in a cross-sectional view through the rotor, the inwardly turned ends of the side walls of the accommodating spaces for the conductor rods are connected by a rounded connecting wall (34).
- 10 9. Rotor according to claim 8, characterised in that the connecting walls (34) of all accommodating spaces for the conductor rods have the same radius.
10. Rotor according to one of the preceding claims, characterised in that the receiving spaces (4 to 7) for the permanent magnets are curved and arranged around the rotational axis of the rotor in such a manner that in a cross-sectional view through the rotor the distance between the receiving spaces (5) for the permanent magnets (11) and the accommodating spaces (20 to 25) for the conductor rods is larger in the area of the magnet axis (17) than in the area of the neutral axis (16).
- 25 11. Rotor according to claim 10, characterised in that in a cross-sectional view through the rotor the receiving spaces (4 to 7) for the permanent magnets (10 to 13) have the shape of bows, which are arranged in the shape of an ellipse, whose main axis covers the neutral axis (16) and whose auxiliary axis covers the magnet axis (17).

12. Rotor according to one of the preceding claims, characterised in that the rotor has at least one transition zone, in which the accommodating spaces for the conductor rods are not curved.

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13. Rotor according to one of the preceding claims, characterised in that the accommodating spaces (20 to 25, 28, 29) for the conductor rods are closed on the radial outside.

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14. Electric motor, particularly an electrical line-start motor, with a stator comprising a plurality of windings, **characterised in** that the rotor (1) according to one of the preceding claims is arranged to be rotational inside the stator.

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15. Electric motor according to claim 14, characterised in that short-circuit rings are arranged on the front sides of the rotor (1), said short-circuit rings connecting the conductor rods with each other.

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